

THE DETAILS OF OVARIOTOMY.

By ALBAN DORAN, F.R.C.S.,

OF LONDON.

ASSISTANT SURGEON TO THE SAMARITAN FREE HOSPITAL.

OVARIOTOMY and allied varieties of abdominal section depend perhaps more than any other operation upon matters of detail. The history of ovariectomy, as given in Sir Spencer Wells' standard work and in certain recent American publications, is a history of details. In iridectomy and lithotomy pure dexterity is of the first importance: in every operation successful after-treatment depends upon matters of detail; but these matters form the very core and substance of an ovariectomy of average difficulty.

Hence, rival specialists dispute over details, such as the proper material for ligature, the kind of knots to be used for securing the pedicle, the merits of Listerism, and the practice of flushing the peritoneal cavity with warm water. I have witnessed the performance of a very large number of ovariectomies by specialists, and a considerable number by able surgeons not used to the operation, and I have seen troubles arise during operation and known of bad results afterwards, in the latter case, solely because the general surgeon does not know, or fails to appreciate necessary details.

The patient will never be the better for sponging which does not clean, drainage which does not drain, ligatures of the pedicle which give way through faulty methods of tying them, sutures of the abdominal wound pulled too firmly and a perfunctory irrigation of the peritoneal cavity where thorough flushing is necessary. Her life depends on a correct understanding and application of matters of detail. I shall, therefore, say a few words on the subjects above indicated.

An intelligent use of the sponge is essential in ovariectomy. The assistant should constantly clean the integuments around the abdominal incision throughout the operation. The intestines above and around the incision must be guarded in the later stages of ovariectomy by flat sponges passed boldly into the peritoneal cavity, care being taken to place them in front of the omentum. A sponge must be kept in Douglas' pouch, and that sponge should not bear any silk threads, left pendent from the wound, as some surgeons recommend. When the operator takes care to search Douglas' pouch, as well as to count the sponges at the end of the operation, no sponge need be left behind; the precaution above noted is therefore needless, whilst threads attached to sponges are greatly in the way of necessary manipulations. In certain operations on a very limited area of the abdominal cavity, Douglas' pouch may be guarded by a sponge bearing threads, but when tumors have to be removed or a wide area of peritoneum searched and handled the practice is objectionable.

In order to cleanse the sponges, when they have been soaked in fluid of a suspicious nature, there is no solution better than sulphurous acid, one part to five of water. It makes the sponges beautifully white and clean. After three or four ovariectomies or abdominal sections of any kind the sponges should be cleaned in this manner, and the process should never be omitted after an operation where a dermoid or suppurating or gangrenous tumor has been removed. Clean white sponges have the advantage of displaying any adventitious matter that may cling to their surfaces, so that the operator may remove it before introducing a sponge into the abdomen. Some antiseptic solutions cause the sponges to turn dark brown so that dirt or dry pieces of coagulum may lie on their surfaces, yet escape observation. Sulphurous acid has not this disadvantage.

In relation to the abdominal wound, there are many matters of detail which must not be overlooked. Inexperienced operators are apt to make the incision too high up in the abdomen, or more correctly speaking, they neglect to bring it down sufficiently low, towards the pubes. This mistake may cause much trouble when the pedicle has to be drawn out of the

wound for transfixion, and it greatly impedes a thorough exploration of the pelvic viscera. Fear of wounding the bladder is the chief reason why the abdominal incision is made too high, but the operator should trust neither to the position of the lower end of the wound, nor even to the catheter, but solely to the appearance of structures as they are exposed one by one by steady and even incision. Should the tumor prove to be uterine, the empty bladder may reach some distance above the pubes, whilst a full bladder is readily recognized by a careful operator.

The incision need never be made more than two inches long at first, for should the tumor turn out to be an ordinary ovarian cyst with few or no adhesions the operation will be as simple as art can render it, and the short incision will, in every respect, prove convenient; whilst, if necessary, the operator may make it three, four, five or six inches long, or longer, at any subsequent stage of the operation. Long incisions, when the abdomen is not distended by great masses of fluid or solid, cause prolapse of the intestine, and therefore necessitate the introduction of many flat sponges high up in the abdominal cavity. In exploratory operations for small diseased ovaries or tubes, a long wound may prove a distinct impediment.

When the operator fails to cut along the *linea alba*, so that he opens the sheath of one rectus instead of hitting off the space between the two muscles, he should not make a second incision to the right or left of the first, but should rather turn up the sheath on one side of the exposed muscle until he reaches its inner border. Two incisions look untidy, confuse the appearances of the parts and make a kind of strap, more likely to slough than a carefully dissected flap of the sheath, and less suitable for the application of the sutures.

The pressure-forceps will prove sufficient to check hæmorrhage from the divided vessels in the abdominal wound, and if properly applied, so that the bows and shanks lie downwards, even six or eight such forceps will never be in the operator's way throughout the course of the operation. After ten minutes any forceps may be taken off, if wanted for a more important purpose. Ligature of an artery in the abdominal wound is very rarely needed. In a series of nineteen ovari-

omies performed by myself I only once found it necessary. The practice is far too common in general hospitals; it defeats one of the great aims of the ovariologist; the insurance of an abdominal cicatrix as firm and as sound as possible, and not rarely causes suppuration, and it denotes an ignorance of the object and the use of the pressure forceps.

At the close of the operation, the sutures must not be pulled too tightly. A tight suture interferes with the vascular nutrition of the parts which it embraces, and sets up irritation. Exudation occurs and a hard mass forms which may break down so as to become an abscess. On the removal of the suture, its track is very liable to suppurate. All these complications prevent perfect cicatrization. The evils of a tight suture are felt long after its removal. I have seen a hernial protrusion commencing at a very small point in the middle of an old ovariectomy wound, evidently the site of a tight ligature.

The ligature of the pedicle is a process demanding extreme attention to details. The operator must be perfectly sure that he knows how to tie the knot which he intends to employ for securing the pedicle. He must not look upon some special knot, recommended by some particular authority, as a talisman. The Staffordshire knot is excellent when tied by a dexterous and experienced surgeon, but it is not the easiest, and at the same time, the safest for a beginner. Should the operator feel uncertain about which end of the ligature is to be passed uppermost, he will probably make some other error, whilst the converse holds good, a difficulty about the level of the ligature or the firm inclusion of both borders of the pedicle rendering the operator liable to get confused about his knot. He should practise the knot, first on a towel or a rag, with stout twine, then on some animal tissue as like a pedicle as possible, using the same kind of ligature as that which he means to employ at operation.

The silk used for ligatures need never be very thick. No. 4 Chinese twist is the stoutest ever required for broad pedicles; No. 3 is, as a rule, quite sufficient. Dr. Keith rightly expostulated, a few years since, against the use of thread "thick enough to hang the patient." A ligature if too stout,

tends to prevent the necessary approximation of the tissues on each side of the groove which is formed. Great care must be taken not to transfix a vessel with the pedicle needle. An ordinary "Liston's needle" with a true point, not very sharp, is the safest instrument to employ for the purpose of transfixion. The form of pedicle-needle with a thick, blunt end is liable to split the pedicle, a grave accident sometimes overlooked. Whatever be the knot upon which the operator has decided, it should be pulled against one of the free borders of the pedicle and cut against the side of the pedicle. When two knots are tied, they must be pulled against the opposite free borders. I trust that these diagrams will make my meaning clear. In both, the thickness of the pedicle is indicated by the long shaded oval figure, and the free borders lie at *a* and *b*. In both, again, transfixion has been effected and the ligature has been passed partly through the pedicle. In Fig. 1 the loop of the ligature *g* has not been cut, but one end *e* of the silk

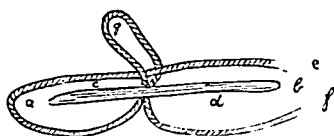
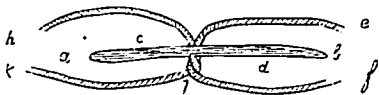


FIG. 1. FIRST METHOD OF LIGATURING THE PEDICLE.

has been passed through that loop. The two ends *e*, *f*, must in this case be tied against *b*; then the loop enclosing the letters *a*, *c*, and that which will include the letters *d*, *b*, will be made fast evenly and simultaneously and the greatest pressure will be as it should be, at *a* and *b*, the two free borders of the pedicle. The ends *e* and *f* must not be tied against the pedicle at *d* for the two loops cannot, in that case, be made so secure, and the silk is apt to fray against the original loop *g*. This principle of securing the loops is always insisted upon by Dr. Bantock who prefers the form of ligature represented in Fig. 1, and from personal experience I can vouch for its accuracy. The same rule applies to the method of ligature advocated by Mr. J. Knowsley Thornton (Fig. 2). The loop *g* in Fig. 1 has been cut and the threads (for the original has thus been made into two threads) are crossed at *l*. The two ends *h*, *k*, must be pulled tight against *a*, and not against *c*; the two ends *e*, *f*, must be made fast against *b*, and not towards *d*. This form of ligature is simple and easy for the beginner.

In all cases, when the threads *e, f*, are brought round the pedicle after the primary ligature has been secured (a precau-



tion usually needed), they must be drawn tight against *a*, and not against the side of the pedicle. Care must also be taken that they are made to sink accurately into the groove formed by the primary ligature. Neglect of the principles above noted will entail splitting of the pedicle, slipping of the ligature, or sloughing of the tissues on the distal side of the ligature groove. Through ignorance of the right method of tying ligatures, the earlier ovariologists had bad results even in simple cases, where the intra-peritoneal treatment of the pedicle was attempted; hence their reluctance to discard the clamp.

Drainage is becoming the ovariologist's sheet anchor. Much misapprehension exists about this term which the specialist employs to signify, not a simple hydraulic arrangement, but a contrivance by which he is enabled to remove fluid which collects in Douglas' pouch after the operation. When the operator trusts to hydraulic laws alone, he is likely to lose his case, for, as the fluid rises in the tube and escapes into the dressings above, more or less slowly, what remains in the tube may continue to irritate the peritoneum below or may become septic and may do more harm than ever. On the other hand, when the operator understands how to drain, he removes the fluid in the tube every two hours, often before the column has had time to overflow into the dressings. This process is easily performed by means of a piece of india-rubber tubing attached to a common glass syringe. It must be continued as long as the fluid remains colored or smells even in the least degree offensive. A nurse may readily be trained to manage the drainage tube properly. As a rule, the tube is not cleared at sufficiently short intervals, so that the column of fluid which it contains is often allowed time to undergo some change pernicious to the patient.

In the case of an incomplete ovariectomy, the proper use of the drainage tube becomes evident. Thus in one of my own

patients, I performed abdominal section and discovered a large multilocular cystic sarcoma, universally adherent except to the anterior parietes of the abdomen. I had thrust the trocar into one cyst and nothing but grumous sarcoma-tissue came away. As removal of the tumor was out of the question, I sewed the edges of the cyst which had been opened to the abdominal walls, after carefully cleaning its cavity which was packed with iodoform wool. In thirty hours, the patient's condition became very bad, and I removed two ounces of fetid fluid from the cyst. Although I had already dressed the wound regularly, I felt that without a drainage tube the opened cavity could not be kept sweet. I therefore passed a tube into the cavity, and frequently removed the fluid which rose up through the tube, finally injecting weak carbolic or, later on, iodine solution. Within twenty-four hours after introduction of the tube, the patient's condition visibly improved. I sat up during the night and cleared the tube myself every three hours, the patient feeling and looking distinctly better after every dressing, and I afterwards felt that it would have been well had I cleared the tube yet more frequently. The tube remained for nineteen days in the cavity; after a time it did not require emptying more than every three hours. After that period I was able to clear away sloughy tissue, and finally succeeded in making the cavity perfectly clean.

The patient was able to go home, and lived six months. In this case death within a few days after operation was warded off by drainage, that is, by contrivance which enabled me to remove the fluid products of decomposing sarcoma-tissue almost as soon as they collected. In the practice of others I have seen precisely similar results following drainage of Douglas' pouch. The statement made by certain surgeons that drainage cannot be effected by passing a tube through an abdominal wound into Douglas' pouch is contradicted by facts, but these gentlemen have been misled by failing to understand what is meant by drainage, a fallacy which I have already discussed. Some authorities declare that exudations which collect between coils of intestine cannot flow into Douglas' pouch, and therefore cannot be removed through the tube. This is probably true, but the frequent removal of what can be withdrawn through

the tube will prevent septic changes in what is left behind.

Irrigation, or flushing out the peritoneum, is a proceeding which must be done boldly or not at all. A few quarts of hot water will do more good than a few pints. I believe that three beneficial agencies are effected by flushing. It washes away morbid fluid, clots and shreds of tissue, it checks hæmorrhage, lastly, it prevents or counteracts shock by diffusing warmth over the serous membrane and viscera. The more boldly the water is poured in, the more surely will the fluids and clots be dislodged, the more thoroughly will the hæmorrhage from adhesions be checked, and the more completely will shock be counteracted. I have seen a pint or two of water emptied into the peritoneum, with the result of not effecting any of the desirable purposes above indicated. Flushing nearly always demands the subsequent introduction of the drainage tube.

The reason why I prefer to speak of flushing rather than of irrigation is implied in the above remarks. The process in question should be different from "irrigation" as understood when applied to an inflamed joint. The water employed by the operator must not be dripped into the peritoneal cavity, but poured in like a flood, else it will not effect its object. The hæmostatic action of a flood of hot water is often apparent to the eyes of a surgeon. A rush of ascitic fluid has the same effect. I once assisted at an exploratory operation where a short incision was made through the abdominal walls very thick from subcutaneous deposit of fat. Before all the divided vessels in the edges of the wound could be secured by pressure forceps, the peritoneal cavity was opened and gallons of hot ascitic fluid shot out with great force. They poured over the right edge of the wound, which at once became pale, and all bleeding ceased. This condition continued till the wound was sewn up. In the meantime there was free hæmorrhage from the left edge of the wound. The dislodgement of noxious material by flushing is self-evident, and almost as apparent to the operator is the manner in which the application of warm fluid to the peritoneum counteracts shock.